

# Work Order ID 140552

Thursday, January 07, 2016 1:28:36 PM

**\*140552\***

Page 1

Item ID: D6101-003 Accept **\*N900040100\*** Setup Start **\*NS1\***  
 Revision ID: Stop **\*NS2\***  
 Item Name: Saddle Billet, 7075  
 Start Date: 1/7/2016 Start Qty: 20.00 **\*20\*** Cust Item ID:  
 Required Date: 1/7/2016 Req'd Qty: 20.00 **\*20\*** Customer:  
 Reference:

Approvals: Process Plan: MLJ Date: JAN 07 2016 Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
 QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_  
 Run Start **\*NR1\***  
 Stop **\*NR2\***

| Sequence ID/<br>Work Center ID | Operation<br>Description | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp |
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|

| Draw Nbr | Revision Nbr |
|----------|--------------|
| D6101    | Rev B        |

|     |            |      |  |  |  |  |  |  |  |
|-----|------------|------|--|--|--|--|--|--|--|
| 100 | PURCHASING | 0.00 |  |  |  |  |  |  |  |
|-----|------------|------|--|--|--|--|--|--|--|

**\*100\***

Purchasing

Purchasing

Memo

Issue P/O: 30939

- a) Description: Alluminum billet
- b) 7.875" x 6.250" x 2.00" thick
- c) Tolerance on all dimensions are +0.030"/-0.000"
- d) Grain direction along 7.875" length
- e) Material: 7075-T7351 (QQ-A-250/12)
- f) Material certification required

110

Receive & Inspect for Damage & Mat'l Certs 0.00

**\*110\***

Packaging

Packaging

Memo

Ensure material certification is attached

DAS  
13  
9-80

JAN 08 2016 20

20x 80/6-02-01-

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |                                             |                                                                                                                                                                                    |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                           |                                 |                                   |                                                                                                                    |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                   |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |                                  |  |  |  |
|--------------------------------------------------------------|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|---------------------------------|-----------------------------------|--------------------------------------------------------------------------------------------------------------------|---------------------------------|----------------------------------------|---------------------------------------------|-----------------------------------|---------------------------------------|------------------------------------------------|------------------------------------|--------------------------------|-----------------------------------------------|----------------------------------------|-----------------------------------|---------------------------------|-----------------------------------------------|-------------------------------|-----------------------------------------|---------------------------------------|-----------------------------------|-------------------------------------------------|------------------------------------------------------------|---------------------------------------------|--------------------------------------------|-----------------------------------|------------------------------------------|--------------------------------|----------------------------------------|------------------------------------------|-------------------------------------|---------------------------------------------|-------------------------------------------|-----------------------------------|--------------------------------------|----------------------------------|----------------------------------|-------------------------------------------|----------------------------------|-------------------------------------|----------------------------------------|-------------------------------------|---------------------------------|------------------------------|----------------------------------------------|---------------------------------------------|----------------------------------------------------------|---------------------------------------|----------------------------------|-------------------------------------|----------------------------------------------|----------------------------------------|--------------------------------------|------------------------------------------------|-------------------------------------------|-------------------------------------------|------------------------------------------------|----------------------------------|--|--|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ |                                             | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> |                                           | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div> |                                           |                                 |                                   |                                                                                                                    |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                   |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |                                  |  |  |  |
| Date :                                                       |                                             | Step #:                                                                                                                                                                            |                                           | QTY Effective :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                           |                                 |                                   | MRB (QS1042) Approval                                                                                              |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                   |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |                                  |  |  |  |
| Description Work Order Deviation                             |                                             |                                                                                                                                                                                    |                                           | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                           |                                 |                                   | Completed By<br><br><br>Lead hand / Supervisor<br>Approval Verification<br><br><br>QC / QA Coordinator<br>Approval |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                   |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |                                  |  |  |  |
|                                                              |                                             |                                                                                                                                                                                    |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                           |                                 |                                   |                                                                                                                    |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                   |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |                                  |  |  |  |
|                                                              |                                             |                                                                                                                                                                                    |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                           |                                 |                                   |                                                                                                                    |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                   |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |                                  |  |  |  |
| Root Cause                                                   |                                             | FAULT CATEGORY                                                                                                                                                                     |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                           |                                 |                                   |                                                                                                                    |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                   |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |                                  |  |  |  |
| Environment <input type="checkbox"/>                         | No Re-verification <input type="checkbox"/> | Pressure/Forced <input type="checkbox"/>                                                                                                                                           | Temperature/Cure <input type="checkbox"/> | Power Loss/Surge <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Positioned Wrong <input type="checkbox"/> | Design <input type="checkbox"/> | Operator <input type="checkbox"/> | Bending <input type="checkbox"/>                                                                                   | Set-up <input type="checkbox"/> | Folio/Program <input type="checkbox"/> | Outside Dimensions <input type="checkbox"/> | Doc/Data <input type="checkbox"/> | Offset/Setup <input type="checkbox"/> | Centre Not Concentric <input type="checkbox"/> | BOM/Route <input type="checkbox"/> | Grain <input type="checkbox"/> | Over/Under tolerance <input type="checkbox"/> | Equip/Tooling <input type="checkbox"/> | Supplier <input type="checkbox"/> | Cracks <input type="checkbox"/> | Broken/Damage/Defect <input type="checkbox"/> | Weld <input type="checkbox"/> | Part Incorrect <input type="checkbox"/> | Handling/Pre <input type="checkbox"/> | Training <input type="checkbox"/> | Crimp/Kink/Ripple/Wave <input type="checkbox"/> | Inspection Incomplete/Unqualified <input type="checkbox"/> | Wrong Stock Pulled <input type="checkbox"/> | Part Lost/Missing <input type="checkbox"/> | Material <input type="checkbox"/> | Use for Testing <input type="checkbox"/> | Cuffs <input type="checkbox"/> | Contamination <input type="checkbox"/> | Out of Sequence <input type="checkbox"/> | Part Moved <input type="checkbox"/> | Internal Transport <input type="checkbox"/> | Poor Information <input type="checkbox"/> | Crushing <input type="checkbox"/> | Countersink <input type="checkbox"/> | Off-set <input type="checkbox"/> | Drawing <input type="checkbox"/> | Tribal Knowledge <input type="checkbox"/> | Rushing <input type="checkbox"/> | Heat Treat <input type="checkbox"/> | Cut Too Short <input type="checkbox"/> | Mislabeled <input type="checkbox"/> | Finish <input type="checkbox"/> | LOA <input type="checkbox"/> | Product Improvement <input type="checkbox"/> | Wave/Twist in Tube <input type="checkbox"/> | Instructions Incomplete/Unclear <input type="checkbox"/> | Fit/Function <input type="checkbox"/> | Misread <input type="checkbox"/> | Substation <input type="checkbox"/> | Process Improvement <input type="checkbox"/> | Marks/Chatter <input type="checkbox"/> | Drill Holes <input type="checkbox"/> | Misaligned/off center <input type="checkbox"/> | Turning Sequence <input type="checkbox"/> | Past Expiry Date <input type="checkbox"/> | Manufacturing Process <input type="checkbox"/> | OTHER : <input type="checkbox"/> |  |  |  |
| Misidentified <input type="checkbox"/>                       | Past Due <input type="checkbox"/>           |                                                                                                                                                                                    |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                           |                                 |                                   |                                                                                                                    |                                 |                                        |                                             |                                   |                                       |                                                |                                    |                                |                                               |                                        |                                   |                                 |                                               |                               |                                         |                                       |                                   |                                                 |                                                            |                                             |                                            |                                   |                                          |                                |                                        |                                          |                                     |                                             |                                           |                                   |                                      |                                  |                                  |                                           |                                  |                                     |                                        |                                     |                                 |                              |                                              |                                             |                                                          |                                       |                                  |                                     |                                              |                                        |                                      |                                                |                                           |                                           |                                                |                                  |  |  |  |

Work Order ID 140552

\*140552\*

Page 2

Thursday, January 07, 2016 1:28:36 PM

Item ID: D6101-003 Accept \*N900040100\* Setup Start \*NS1\*

Revision ID: Stop \*NS2\*

Item Name: Saddle Billet, 7075

Start Date: 1/7/2016 Start Qty: 20.00 \*20\* Cust Item ID:

Required Date: 1/7/2016 Req'd Qty: 20.00 \*20\* Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start \*NR1\*

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop \*NR2\*

| Sequence ID/<br>Work Center ID | Operation<br>Description                          | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp                |
|--------------------------------|---------------------------------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|-------------------------------|
| 120                            | QC6- Inspect dimensions to drawing                | 0.00                 |         |        |              | 20            | 0             |                  | DAS<br>14<br>9-89<br>16/02/01 |
| *120*                          |                                                   |                      |         |        |              |               |               |                  |                               |
| QC                             | Memo                                              | 0.00                 |         |        |              |               |               |                  |                               |
| Quality Control                | Ensure Material certification comply to Dwg D6101 |                      |         |        |              |               |               |                  |                               |
| 130                            | Identify as per dwg & Stock Location: MAT046      | 0.00                 |         |        |              | 20            | 0             |                  | DAS<br>14<br>9-89<br>16/02/01 |
| *130*                          |                                                   |                      |         |        |              |               |               |                  |                               |
| Packaging                      | Memo                                              | 0.00                 |         |        |              |               |               |                  |                               |
| Packaging                      | LOCATION: MAT046                                  |                      |         |        |              |               |               |                  |                               |
| 140                            | QC21- Final Inspection - Work Order Release       | 0.00                 |         |        |              |               |               |                  |                               |
| *140*                          |                                                   |                      |         |        |              |               |               |                  |                               |
| QC                             | Memo                                              | 0.03                 |         |        |              |               |               |                  |                               |
| Quality Control                |                                                   |                      |         |        |              |               |               |                  |                               |

MLJ FEB 03 2016

MLJ FEB 02 2016

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |  |                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |  |                       |                                                 |  |
|--------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|-----------------------|-------------------------------------------------|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ |  | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> |  | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>             Skid-tube <input type="checkbox"/><br/>             Machining <input type="checkbox"/><br/>             Thermoforming <input type="checkbox"/><br/>             Large Fab <input type="checkbox"/> </div> <div>             Cross tube <input type="checkbox"/><br/>             Small Fab <input type="checkbox"/><br/>             Finishing <input type="checkbox"/><br/>             Composite <input type="checkbox"/> </div> <div>             Water Jet <input type="checkbox"/><br/>             Prod. Eng. Coord. <input type="checkbox"/><br/>             Rec/Store/Packaging <input type="checkbox"/><br/>             Supplier <input type="checkbox"/> </div> <div>             Engineering <input type="checkbox"/><br/>             Quality <input type="checkbox"/><br/>             Other <input type="checkbox"/> </div> </div> |  |  |                       |                                                 |  |
| Date :                                                       |  | Step #:                                                                                                                                                                            |  | QTY Effective :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |  | MRB (QSI042) Approval |                                                 |  |
| Description Work Order Deviation                             |  |                                                                                                                                                                                    |  | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |  |                       |                                                 |  |
|                                                              |  |                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |  |                       |                                                 |  |
|                                                              |  |                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |  |                       | Completed By                                    |  |
|                                                              |  |                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |  |                       | Lead hand / Supervisor<br>Approval Verification |  |
|                                                              |  |                                                                                                                                                                                    |  | QC / QA Coordinator<br>Approval                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |  |                       |                                                 |  |

| Root Cause                                  |                          |                       |                          | FAULT CATEGORY         |                          |                                   |                          |
|---------------------------------------------|--------------------------|-----------------------|--------------------------|------------------------|--------------------------|-----------------------------------|--------------------------|
| Environment <input type="checkbox"/>        | <input type="checkbox"/> | No Re-verification    | <input type="checkbox"/> | Pressure/Forced        | <input type="checkbox"/> | Temperature/Cure                  | <input type="checkbox"/> |
| Design <input type="checkbox"/>             | <input type="checkbox"/> | Operator              | <input type="checkbox"/> | Bending                | <input type="checkbox"/> | Set-up                            | <input type="checkbox"/> |
| Doc/Data <input type="checkbox"/>           | <input type="checkbox"/> | Offset/Setup          | <input type="checkbox"/> | Centre Not Concentric  | <input type="checkbox"/> | BOM/Route                         | <input type="checkbox"/> |
| Equip/Tooling <input type="checkbox"/>      | <input type="checkbox"/> | Supplier              | <input type="checkbox"/> | Cracks                 | <input type="checkbox"/> | Broken/Damage/Defect              | <input type="checkbox"/> |
| Handling/Pre <input type="checkbox"/>       | <input type="checkbox"/> | Training              | <input type="checkbox"/> | Crimp/Kink/Ripple/Wave | <input type="checkbox"/> | Inspection Incomplete/Unqualified | <input type="checkbox"/> |
| Material <input type="checkbox"/>           | <input type="checkbox"/> | Use for Testing       | <input type="checkbox"/> | Cuffs                  | <input type="checkbox"/> | Contamination                     | <input type="checkbox"/> |
| Internal Transport <input type="checkbox"/> | <input type="checkbox"/> | Poor Information      | <input type="checkbox"/> | Crushing               | <input type="checkbox"/> | Countersink                       | <input type="checkbox"/> |
| Tribal Knowledge <input type="checkbox"/>   | <input type="checkbox"/> | Rushing               | <input type="checkbox"/> | Heat Treat             | <input type="checkbox"/> | Cut Too Short                     | <input type="checkbox"/> |
| LOA <input type="checkbox"/>                | <input type="checkbox"/> | Product Improvement   | <input type="checkbox"/> | Wave/Twist in Tube     | <input type="checkbox"/> | Instructions Incomplete/Unclear   | <input type="checkbox"/> |
| Substation <input type="checkbox"/>         | <input type="checkbox"/> | Process Improvement   | <input type="checkbox"/> | Marks/Chatter          | <input type="checkbox"/> | Drill Holes                       | <input type="checkbox"/> |
| Past Expiry Date <input type="checkbox"/>   | <input type="checkbox"/> | Manufacturing Process | <input type="checkbox"/> |                        |                          |                                   |                          |
| Misidentified <input type="checkbox"/>      | <input type="checkbox"/> | Past Due              | <input type="checkbox"/> |                        |                          |                                   |                          |

# Picklist Print

Thursday, January 07, 2016 1:28:39 PM

Page 1 / 1

Work Order ID: 140552

**\*140552\***

Parent Item: D6101-003

**\*D6101-003\***

Parent Item Name: Saddle Billet, 7075

Start Date: 1/7/2016

Required Date: 1/7/2016

Start Qty: 20.00

Required Qty: 20.00

Comments: IPP A: 01.05.04New IssueC

| Component Item ID/<br>Item Name | Replacement<br>Item ID | Mfg/<br>Purch | Bin<br>Item | Primary<br>Location | Last<br>Location | Route<br>Seq ID | Unit of<br>Measure | Qty on<br>Hand | Qty per Kit | Total<br>Qty | Qty<br>Issued | Date<br>Issued | Status |
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|

D6101-003P

Purchased

No

110

Each

0.0000

1

20

**\*D6101-003P\***

**\*\***

20x

Sp/6-02-01

7075-T7351 2X6.25X7.875

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |                          |                                                                                                                                                                                    |                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                |                                               |  |                                                                                                                    |  |
|--------------------------------------------------------------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|-----------------------------------------------|--|--------------------------------------------------------------------------------------------------------------------|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ |                          | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> |                                                 | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div> |                                                |                                               |  |                                                                                                                    |  |
| Date :                                                       |                          | Step #:                                                                                                                                                                            |                                                 | QTY Effective :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                |                                               |  | MRB (QS1042) Approval                                                                                              |  |
| Description Work Order Deviation                             |                          |                                                                                                                                                                                    |                                                 | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                |                                               |  | Completed By<br><br><br>Lead hand / Supervisor<br>Approval Verification<br><br><br>QC / QA Coordinator<br>Approval |  |
|                                                              |                          |                                                                                                                                                                                    |                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                |                                               |  |                                                                                                                    |  |
|                                                              |                          |                                                                                                                                                                                    |                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                |                                               |  |                                                                                                                    |  |
| Root Cause                                                   |                          | FAULT CATEGORY                                                                                                                                                                     |                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                |                                               |  |                                                                                                                    |  |
| Environment <input type="checkbox"/>                         | <input type="checkbox"/> | No Re-verification <input type="checkbox"/>                                                                                                                                        | Pressure/Forced <input type="checkbox"/>        | Temperature/Cure <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Power Loss/Surge <input type="checkbox"/>      | Positioned Wrong <input type="checkbox"/>     |  |                                                                                                                    |  |
| Design <input type="checkbox"/>                              | <input type="checkbox"/> | Operator <input type="checkbox"/>                                                                                                                                                  | Bending <input type="checkbox"/>                | Set-up <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Folio/Program <input type="checkbox"/>         | Outside Dimensions <input type="checkbox"/>   |  |                                                                                                                    |  |
| Doc/Data <input type="checkbox"/>                            | <input type="checkbox"/> | Offset/Setup <input type="checkbox"/>                                                                                                                                              | Centre Not Concentric <input type="checkbox"/>  | BOM/Route <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Grain <input type="checkbox"/>                 | Over/Under tolerance <input type="checkbox"/> |  |                                                                                                                    |  |
| Equip/Tooling <input type="checkbox"/>                       | <input type="checkbox"/> | Supplier <input type="checkbox"/>                                                                                                                                                  | Cracks <input type="checkbox"/>                 | Broken/Damage/Defect <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Weld <input type="checkbox"/>                  | Part Incorrect <input type="checkbox"/>       |  |                                                                                                                    |  |
| Handling/Pre <input type="checkbox"/>                        | <input type="checkbox"/> | Training <input type="checkbox"/>                                                                                                                                                  | Crimp/Kink/Ripple/Wave <input type="checkbox"/> | Inspection Incomplete/Unqualified <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Wrong Stock Pulled <input type="checkbox"/>    | Part Lost/Missing <input type="checkbox"/>    |  |                                                                                                                    |  |
| Material <input type="checkbox"/>                            | <input type="checkbox"/> | Use for Testing <input type="checkbox"/>                                                                                                                                           | Cuffs <input type="checkbox"/>                  | Contamination <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Out of Sequence <input type="checkbox"/>       | Part Moved <input type="checkbox"/>           |  |                                                                                                                    |  |
| Internal Transport <input type="checkbox"/>                  | <input type="checkbox"/> | Poor Information <input type="checkbox"/>                                                                                                                                          | Crushing <input type="checkbox"/>               | Countersink <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Off-set <input type="checkbox"/>               | Drawing <input type="checkbox"/>              |  |                                                                                                                    |  |
| Tribal Knowledge <input type="checkbox"/>                    | <input type="checkbox"/> | Rushing <input type="checkbox"/>                                                                                                                                                   | Heat Treat <input type="checkbox"/>             | Cut Too Short <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Mislabeled <input type="checkbox"/>            | Finish <input type="checkbox"/>               |  |                                                                                                                    |  |
| LOA <input type="checkbox"/>                                 | <input type="checkbox"/> | Product Improvement <input type="checkbox"/>                                                                                                                                       | Wave/Twist in Tube <input type="checkbox"/>     | Instructions Incomplete/Unclear <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Fit/Function <input type="checkbox"/>          | Misread <input type="checkbox"/>              |  |                                                                                                                    |  |
| Substation <input type="checkbox"/>                          | <input type="checkbox"/> | Process Improvement <input type="checkbox"/>                                                                                                                                       | Marks/Chatter <input type="checkbox"/>          | Drill Holes <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Misaligned/off center <input type="checkbox"/> | Turning Sequence <input type="checkbox"/>     |  |                                                                                                                    |  |
| Past Expiry Date <input type="checkbox"/>                    | <input type="checkbox"/> | Manufacturing Process <input type="checkbox"/>                                                                                                                                     | OTHER : _____                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                |                                               |  |                                                                                                                    |  |
| Misidentified <input type="checkbox"/>                       | <input type="checkbox"/> | Past Due <input type="checkbox"/>                                                                                                                                                  |                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                |                                               |  |                                                                                                                    |  |

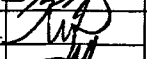
A 3D perspective drawing of a rectangular prism. The three dimensions are labeled with arrows pointing to the corresponding edges: 'THICK' points to the vertical edge (height), 'LENGTH' points to the front horizontal edge (length), and 'WIDTH' points to the receding horizontal edge (width). Dashed lines are used to show the hidden edges of the prism.

 ACCEPTABLE SPECIFICATIONS FOR 7075-T7351 ALUMINUM ARE AMS-QQ-A-250/12, QQ-A-250/12, OR ASTM B209

| Part No.  | Alloy                    | Length | Width | Thick | Grain Direction    |
|-----------|--------------------------|--------|-------|-------|--------------------|
| D6101-001 | 7075-T7351 (QQ-A-250/12) | 6.000  | 6.250 | 2.000 | Along 6.000 Length |
| D6101-003 | 7075-T7351 (QQ-A-250/12) | 7.875  | 6.250 | 2.000 | Along 7.875 Length |
| D6101-005 | 7075-T7351 (QQ-A-250/12) | 5.000  | 8.250 | 2.500 | Along 5.000 Length |
| D6101-007 | 7075-T7351 (QQ-A-250/12) | 7.750  | 8.250 | 2.500 | Along 7.750 Length |
| D6101-009 | 7075-T7351 (QQ-A-250/12) | 8.700  | 8.250 | 2.500 | Along 8.700 Length |
| D6101-011 | 7075-T7351 (QQ-A-250/12) | 9.700  | 8.250 | 2.500 | Along 9.700 Length |
| D6101-013 | 7075-T7351 (QQ-A-250/12) | 10.100 | 8.250 | 2.500 | Along 10.10 Length |
| D6101-015 | 7075-T7351 (QQ-A-250/12) | 9.450  | 6.250 | 2.500 | Along 9.450 Length |
| D6101-017 | 7075-T7351 (QQ-A-250/12) | 6.350  | 6.250 | 2.250 | Along 6.350 Length |
|           |                          |        |       |       |                    |
|           |                          |        |       |       |                    |

RELEASED  
09/07/15/W/P

SUBJECTIVE  
RETURN TO  
EXPERIMENTAL  
UNITED STATES GOVT COPY  
SUBJECT OF DOCUMENT  
WATERGATE SCANDAL  
AT NEW YORK  
140SSA MUS  
16-01-07

|            |                                                                                     |                                                                                                                                                                                                                                                                            |              |
|------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| B          | ADDED D6101-015/-017, ADD ASTM B209                                                 | RF                                                                                                                                                                                                                                                                         | 09.04.23     |
| A          | NEW ISSUE                                                                           | CP                                                                                                                                                                                                                                                                         | 01.03.30     |
| REV.       | DESCRIPTION                                                                         | BY                                                                                                                                                                                                                                                                         | DATE         |
| DESIGN     | CP                                                                                  | <b>DART AEROSPACE LTD</b><br>HAWKESBURY, ONTARIO, CANADA                                                                                                                                                                                                                   |              |
| DRAWN      | RF                                                                                  |                                                                                                                                                                                                                                                                            |              |
| CHECKED    |  | DRAWING NO.                                                                                                                                                                                                                                                                | REV. B       |
| MFG. APPR. |  | D6101                                                                                                                                                                                                                                                                      | SHEET 1 OF 1 |
| APPROVED   |  | TITLE                                                                                                                                                                                                                                                                      | SCALE        |
| DE APPR.   |                                                                                     | SADDLE BILLET, 7075                                                                                                                                                                                                                                                        | NTS          |
| DATE       | 09.04.23                                                                            | COPYRIGHT © 2001 BY DART AEROSPACE LTD<br>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT THE WRITTEN PERMISSION OF DART AEROSPACE LTD. |              |



Dart Aerospace Ltd.  
1270 Aberdeen Street  
Hawkesbury, ON K6A 1K7  
Tel: 613 632 9577  
Fax: 613 632 1053

## PURCHASE ORDER

Purchase Order ID PO30939

Purchase Order Date 1/8/2016

PO Print Date 1/8/2016

Page Number 1 of 2

Order From :

VU-MET002

Ship To : DART AEROSPACE LTD

1270 ABERDEEN  
HAWKESBURY, ON K6A 1K7  
CANADA

METAUX CASTLE  
P.O. BOX 4090 STN A  
TORONTO, ONTARIO M5W OE9  
CANADA

**E-MAILED**  
JAN 8 2016

Contact Name

Vendor Phone

Ship To Contact

Ship To Phone

Ship Via:

Yours ppd

Ship Acct:

Buyer

Customer POID

Customer Tax #

Terms

Currency

FOB

Chantal Lavoie

10127-2607

Net 30

USD

Destination-Collect

| Line Nbr | Reference Vendor Part Number                                                                                                                                                                    | Description/ Mfg ID         | Req Date/ Taxable | CD | Req Qty/ Unit of Measure | PO Unit Price | Extended Price |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-------------------|----|--------------------------|---------------|----------------|
|          | Line Comments                                                                                                                                                                                   |                             | Promise Date      |    |                          |               |                |
|          | Delivery Comments                                                                                                                                                                               |                             |                   |    |                          |               |                |
|          | D6101-003P                                                                                                                                                                                      | 7075-T7351 2X6.25X7.875     | 1/22/2016         |    | 20.00                    | \$35.29       | \$705.80       |
|          |                                                                                                                                                                                                 |                             | Yes               |    | Each                     |               |                |
|          |                                                                                                                                                                                                 |                             | 1/22/2016         |    |                          |               |                |
|          | AS PER DWG D6101 REV. B<br>B140552<br>SIZE: 7.875" X 6.250" X 2.00" THICK<br>GRAIN DIRECTION ALONG 7.875" LENGHT<br>MATERIAL: 7075-T7351 QQ-A-250/12<br>TOLERANCE AS PER QUOTE +.030"/-.000"    |                             |                   |    |                          |               |                |
|          | Line Total:                                                                                                                                                                                     |                             |                   |    |                          |               | \$705.80       |
| 2        | D6101-007P                                                                                                                                                                                      | 7075-T7351<br>8.25X7.75X2.5 | 1/22/2016         |    | 20.00                    | \$56.11       | \$1,122.20     |
|          |                                                                                                                                                                                                 |                             | Yes               |    | Each                     |               |                |
|          |                                                                                                                                                                                                 |                             | 1/22/2016         |    |                          |               |                |
|          | AS PER DWG D6101 REV. B<br>B140553<br>MATERIAL: 7075-T7351 (QQ-A-250/12)<br>SIZE: 7.750" X 8.250" X 2.50" THICK<br>GRAIN DIRECTION ALONG: 7.750" LENGTH<br>TOLERANCE AS PER QUOTE +.030"/-.000" |                             |                   |    |                          |               |                |

Sp/6-02-01

Note:

1/8/2016



**Castle Metals®**

A. M. Castle &amp; Co.

PACKING SLIP/  
CERTIFICATE OF CONFORMANCE

Page 1 of 2

Shipment No:2865751

|                                                                                                    |               |                                                                                        |  |                                                                                         |  |                                                                                              |  |
|----------------------------------------------------------------------------------------------------|---------------|----------------------------------------------------------------------------------------|--|-----------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------|--|
| <b>Ship From:</b><br>A. M. CASTLE & CO.<br>2150 ARGENTIA ROAD<br>MISSISSAUGA, ON L5N<br>2K7<br>CAN |               | <b>Sold To:</b><br>DART AEROSPACE LTD<br>1270 ABERDEEN<br>HAWKESBURY, ON K6A 1K7<br>CA |  | <b>Ship To:</b><br>DART AEROSPACE LTD<br>1270 ABERDEEN<br>HAWKESBURY, ON<br>K6A 1K7 CAN |  | <b>Deliver To:</b><br>DART AEROSPACE LTD<br>1270 ABERDEEN<br>HAWKESBURY, ON<br>K6A 1K7<br>CA |  |
| <b>Date Shipped</b>                                                                                | <b>F.O.B.</b> | <b>Freight Terms</b>                                                                   |  | <b>Carrier</b>                                                                          |  | <b>BOL No</b>                                                                                |  |
| 28-JAN-16                                                                                          | ORIGIN        | Prepaid                                                                                |  | MANITOULIN                                                                              |  | 2865751-2                                                                                    |  |

|                         |                                       |
|-------------------------|---------------------------------------|
| <b>Shipment Details</b> | <b>Final Destination Branch - TOR</b> |
|-------------------------|---------------------------------------|

|                                   |                     |                                                      |                                                                                                                                                                                                                                                                                                         |                                 |
|-----------------------------------|---------------------|------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| <b>Order No</b><br>4204078        | <b>Line No</b><br>1 | <b>Item No</b><br>752237.MO                          | <b>Description</b><br><del>2.0000 PL 7075 T7351 ALUMINUM US1 48.5000 144.5000</del><br>CUT RECTANGLE TO 6.25 IN ( + .0310/- .0000 IN (GRAIN TO RUN<br>ALONG 7.875")) X 7.875 IN ( + .0310/- .0000 IN (GRAIN TO RUN<br>ALONG 7.875")) - ALUMINUM PLATE SAW SPECIFICATIONS:<br><del>AMS-QQ-A-250/12</del> |                                 |
| <b>Purchase Order No</b><br>30939 |                     | <b>Part Number</b><br>YOUR ITEM NUMBER:<br>D6101-003 | <b>Ordered Qty</b><br>20.00 PCS                                                                                                                                                                                                                                                                         | <b>Invoice Qty</b><br>20.00 PCS |

|                |                                                                                                                                                                                                                                                         |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Details</b> | ALL PAPERWORK MUST FOLLOW ORDER / CUSTOMER MUST RECEIVE AT TIME OF DELIVERY<br>ALL MATERIAL MUST HAVE IDENTIFYING MARKINGS EX:HEAT #S<br>Email P/s and certs to: clavoie@dartaero.com<br>END USER: DART AEROSPACE<br>END USE: COMMERCIAL AIRCRAFT PARTS |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                     |                    |                    |                |            |                   |                    |                         |
|---------------------|--------------------|--------------------|----------------|------------|-------------------|--------------------|-------------------------|
| <b>Delivery No.</b> | <b>Mill</b>        | <b>Heat Number</b> | <b>Mech Id</b> | <b>PCS</b> | <b>Width (IN)</b> | <b>Length (IN)</b> | <b>Shipped Qty(LBS)</b> |
| 120313073           | KAISER<br>ALUMINUM |                    |                | 8          |                   |                    | 81.2868                 |
| 120313073           | KAISER<br>ALUMINUM |                    |                | 12         |                   |                    | 121.9301                |



**Castle Metals®**

A. M. Castle & Co.

PACKING SLIP/  
CERTIFICATE OF CONFORMANCE

Page 2 of 2

|  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|
|  |  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|--|

These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.

We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.

Reviewed by Authorized Castle Metals Representative:

*Glenn H. W. Han*

Date:

Name:

JAN 28 2016



*SP/6-02-01*

## SHIP TO:

A M CASTLE & CO  
14001 ORANGE AVE  
P.O. BOX 1402  
PARAMOUNT, CA 90723

# KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215  
Phone: (800) 367-2586

## CERTIFIED TEST REPORT

Serial Number  
4393561

29/30

## SOLD TO:

AM CASTLE & CO- SOLD TO  
1420 KENSINGTON RD  
SUITE 220  
OAK BROOK, IL 60523

|                               |  |                         |                           |                                 |                |                                     |                  |                                             |  |                                      |
|-------------------------------|--|-------------------------|---------------------------|---------------------------------|----------------|-------------------------------------|------------------|---------------------------------------------|--|--------------------------------------|
| CUSTOMER PO NUMBER:<br>339317 |  | WORK PACKAGE:           |                           | CUSTOMER PART NUMBER:<br>452237 |                | SHIP RUN/LOAD:<br>103355/17         |                  | GOV'T CONTRACT NUMBER:                      |  |                                      |
| KAISER ORDER NO:<br>1196506   |  | LINE ITEM:<br>1         | SHIP DATE:<br>13-OCT-2015 |                                 | ALLOY:<br>7075 | CLAD:<br>BARE                       | TEMPER:<br>T7351 | PRODUCT DESCRIPTION:<br>KaiserSelect Plate  |  |                                      |
| WEIGHT SHIPPED:<br>1420 LB    |  | QUANTITY:<br>1 PCS EST. |                           | TRUCK B/L #:<br>2056443         |                | GAUGE:<br>2.0000 IN<br>(50.8000 MM) |                  | DIAMETER/WIDTH:<br>48.500 IN<br>(1231.9 MM) |  | LENGTH:<br>144.500 IN<br>(3670.3 MM) |

MHU 1938021: LOT 780094A9: 1 pieces;

## Certified Specifications

DAS  
14  
9-89



AMS 4078/RevJ  
ASTM B 209/Rev14  
BSS 7055/RevB  
DPS 4.713/RevAK  
MMS 159/RevT

AMS-QQ-A-250/12/RevA  
ASTM B 594/Rev13  
CMMP 025/RevU  
GAMPS 9101/RevB/AmdSCN1  
PS 21211/RevM

AMS-STD-2154/RevA  
BAC 5439/RevJ  
CSTI 006/RevE  
GSS16100/RevG/Amd1

Test Code: 4297

## Test Results

Lot: 780094A9 Cast 874

Drop 60

Ingot 5

Parent Lot: 15418388 Melted in USA

(ASTM E8/B557)

(EN 2002-1)

|          |                 |                                   |                                                  |                                               |                             |
|----------|-----------------|-----------------------------------|--------------------------------------------------|-----------------------------------------------|-----------------------------|
| Tensile: | Temper<br>T7351 | Dir / # Tests<br>LT / 2 (Min:Max) | Ultimate KSI (MPA)<br>71.3 : 72.8<br>(482 : 502) | Yield KSI (MPA)<br>60.0 : 62.4<br>(414 : 430) | Elongation %<br>12.7 : 13.7 |
|----------|-----------------|-----------------------------------|--------------------------------------------------|-----------------------------------------------|-----------------------------|

(ASTM E1004)

(EN 2004-1)

|                     |          |          |
|---------------------|----------|----------|
| Conductivity %IACS: | 39.7 Min | 40.6 Max |
| (MS/M):             | 23.0 Min | 23.5 Max |

(ASTM E1251)

|             |      |      |     |      |     |      |     |      |      |      |          |
|-------------|------|------|-----|------|-----|------|-----|------|------|------|----------|
| Chemistry:  | SI   | FE   | CU  | MN   | MG  | CR   | ZN  | TI   | V    | ZR   | OTHER    |
| Actual(wt%) | 0.07 | 0.15 | 1.5 | 0.06 | 2.5 | 0.21 | 5.8 | 0.03 | 0.01 | 0.02 | TOT 0.05 |



Trentwood Works - Spokane, WA 99215  
Phone: (800) 367-2586

## CERTIFIED TEST REPORT

Serial Number  
4393561

30/30

### ALLOY LIMITS

|          | SI   | FE   | CU  | MN   | MG  | CR   | ZN  | TI   | V    | ZR   | OTHER | MAX  |
|----------|------|------|-----|------|-----|------|-----|------|------|------|-------|------|
| 7075     |      |      |     |      |     |      |     |      |      |      |       |      |
| MIN(wt%) | 0.00 | 0.00 | 1.2 | 0.00 | 2.1 | 0.18 | 5.1 | 0.00 | 0.00 | 0.00 | EACH  | 0.05 |
| MAX(wt%) | 0.40 | 0.50 | 2.0 | 0.30 | 2.9 | 0.28 | 6.1 | 0.20 | 0.05 | 0.05 | TOT   | 0.15 |

### Aluminum Remainder

### ORDER COMMENTS

AMC CA-15413A R 7  
AMS 4078, AMS QQ-A-250/12, AMS STD-2154, A  
STM B209, ASTM B594, BS  
S 7055, CMMP 025, CSTI 006, DPS 4.713, GAMP  
S 9101, MMS 159, PS 212

11

### TEST NOTES

Metal represented by this test report was 100% immersion  
ultrasonically tested from one side with 3mm dead zones top  
and bottom and meets the Class A and Class B requirements of  
all specifications referenced on this test report. No  
surface marking of sonic indications is performed.

### CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC (Kaiser), is ISO-9001:2008/AS9100C certified and hereby certifies that all material shipped under this order:  
\* has been inspected, tested, and found to be in conformance with the requirements of the specifications indicated herein. For material thicknesses outside specification limits, mechanical properties are as shown herein and chemical composition meets specification requirements.  
\* was melted in the United States of America or a qualifying country per DFARS 225.872-1 (a), was manufactured in the United States of America, and meets the requirements of DFARS 252.225 for domestic content.  
\* has been thermally processed in compliance with AMS 2772, where applicable.  
\* is mercury free, within the limits of detection of ASTM E1251 ( $< 1$  ppm).  
\* is in compliance with RoHS 2, European Union Directive 2011/65/EU.  
\* is in compliance with and regularly monitors any updates to the European Chemical Agency, ECHA, REACH regulations, (EC) n°1907/2006.  
\* is free of Conflict Minerals, as defined in Section 15.2 of the Dodd-Frank Act.  
Any warranty is limited to that shown on Kaiser Aluminum's standard general terms and conditions of sale. Test reports are on file, subject to examination. Test reports shall not be reproduced except in full, without the written approval of the Kaiser Aluminum laboratory. The recording of false, fictitious or fraudulent statements or entries on the certificate may be punished as a felony under federal law.

JAMES HEMENWAY, LABORATORIES SUPERVISOR

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: DG101-003  
 DATE: 16/02/01

PO / BATCH NO.: 30939/140552

MATERIAL CERT REC'D: yes  
 QUANTITY RECEIVED: 20  
 QUANTITY INSPECTED: 20  
 QUANTITY REJECTED: \_\_\_\_\_

THICKNESS ORDERED: 7.875X6.250X2.00  
 THICKNESS RECEIVED: 7.875X6.250X2.00  
 SHEET SIZE ORDERED: \_\_\_\_\_  
 SHEET SIZE RECEIVED: \_\_\_\_\_

| DESCRIPTION                                        | NCR<br>(Check<br>Y/N)            |                                  | COMMENTS |
|----------------------------------------------------|----------------------------------|----------------------------------|----------|
| SURFACE DAMAGE                                     | Y                                | <input checked="" type="radio"/> |          |
| CORRECT FINISH                                     | <input checked="" type="radio"/> | N                                |          |
| CORROSION                                          | Y                                | <input checked="" type="radio"/> |          |
| CORRECT GRAIN DIRECTION                            | <input checked="" type="radio"/> | N                                |          |
| CORRECT MATERIAL                                   | <input checked="" type="radio"/> | N                                |          |
| CORRECT THICKNESS                                  | <input checked="" type="radio"/> | N                                |          |
| PHOTO REQUIRED                                     | Y                                | <input checked="" type="radio"/> |          |
| CORRECT MATERIAL                                   | <input checked="" type="radio"/> | N                                |          |
| CORRECT REF # TO LINK CERT                         | <input checked="" type="radio"/> | N                                |          |
| CORRECT MATERIAL IDENTIFICATION                    | <input checked="" type="radio"/> | N                                |          |
| CORRECT M# ON THE MATERIAL                         | <input checked="" type="radio"/> | N                                |          |
| DOES THIS MATERIAL REQUIRE<br>ENGINEERING SIGN OFF | Y                                | <input checked="" type="radio"/> |          |
| DOES THIS REQUIRE AN<br>EXTRUSION REPORT           | Y                                | <input checked="" type="radio"/> |          |

| CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK.<br>RECORD RESULTS BELOW |     |     |       |       |
|------------------------------------------------------------------------------------|-----|-----|-------|-------|
| TYPE OF MATERIAL<br>SIZE OF TEST SAMPLE<br>HARDNESS / DUROMETER READING            | HRC | HRB | DUR A | DUR D |
|                                                                                    |     |     |       |       |
|                                                                                    |     |     |       |       |

*testers located in the Quality Office*

| QC 18 INSPECTION                                     | ENGINEERING SIGNOFF (if required)   |
|------------------------------------------------------|-------------------------------------|
| INSPECTED BY: <u>DAS 14</u><br>DATE: <u>16/02/01</u> | SIGNED OFF BY: _____<br>DATE: _____ |

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

# **MATERIAL RECEIPT INSPECTION FORM**

## **INSTRUCTIONS FOR INSPECTING BAR, TUBING, ROUND, & SHEET STOCK**

- 1- VERIFY STOCK TO DART PURCHASE ORDER
- 2- MEASURE ALL DIMENSIONS FOR EACH PURCHASED STOCK
  - a. WIDTH, THICKNESS, DIAMETER, WALL THICKNESS & LENGTH
- 3- VERIFY CONDITION OF MATERIAL i.e. DAMAGED, CORRODED, etc.
- 4- VERIFY THAT SUPPLIER HAS A NUMBER (HEAT #) ON ITS RECEIVING REPORT TO LINK TO MATERIAL CERTS
- 5- VERIFY MATERIAL CERTS ARE CORRECT TO THE DART PO INSTRUCTIONS
- 6- REMOVE / CUT A PIECE OF MATERIAL FOR SAMPLE HARDNESS TESTING

## **INSTRUCTIONS FOR INSPECTING SKIDTUBE & STEP EXTRUSION**

- 1- VERIFY TO DART SUPPLIED DRAWING
- 2- SAMPLE INSPECT MATERIAL IN BUNDLE TO ENSURE MATERIAL CAN BE RECEIVED INTO DART
- 3- USING PORTABLE HARDNESS TESTER VERIFY HARDNESS OF THE MATERIAL TO THE DRAWING
- 4- VERIFY THAT MATERIAL CERTS MATCH TO WHATS CALLED UP ON THE DART DRAWING

### **AFTER MATERIAL PASSES INSPECTION**

- 5- HAVE DART EMPLOYEES START STOCKING MATERIAL BUT REQUEST MIN 20pcs FOR FULL INSPECTION
- 6- INSPECT ALL DIMS AS PER DRAWING REQUIREMENTS

## **INSTRUCTIONS FOR INSPECTING CROSS TUBE MATERIAL**

- 1- VERIFY MATERIAL CERTS MATCH THE REQUIREMENTS ON THE DART DRAWINGS
- 2- INSPECT MIN. HALF THE BATCH OF EXTRUSION RECEIVED INTO DART
- 3- INSPECT MATERIAL AS PER THE EXTRUSION REPORT
  - a. WALL THICKNESS USING ULTRA-SONIC IN 4 LOCATIONS
  - b. OUTSIDE DIAMETER HIGHEST/LOWEST BOTH ENDS
  - c. INSIDE DIAMETER HIGHEST/LOWEST BOTH ENDS
  - d. STRAIGHTNESS @ CENTER OVER 12" SPAN
  - e. WALL THICKNESS USING TUBE MICROMETER HIGHEST/LOWEST BOTH ENDS
- 4- IDENTIFY EACH TUBE IN SEQUENCE OF INSPECTING (TUBE 1, TUBE2.....) AND W/O# AND PO#
- 5- RECORD ALL FINDINGS ON EXTRUSION REPORT

IF ANY QUESTIONS PLEASE SEE QC COORDINATOR BEFORE GOING FURTHER